CLAIMS

1. A fiber optic system for detecting a stroke of a pump, the fiber optic system comprising:

a first fiber optic line configured for directing light onto a portion of the pump that moves during the stroke of the pump; and

a second fiber optic line configured for receiving light that has been transmitted from the first fiber optic line and reflected by the portion of the pump, wherein receipt of the light by the second fiber optic line occurs at a specified point during the stroke of the pump.

2. The fiber optic system of claim 1 wherein the portion of the pump that moves comprises a reciprocating portion of the pump.

3. The fiber optic system of claim 2, wherein the first and second fiber optic lines are disposed at an angle calculated to reflect light off of the reciprocating portion when the reciprocating portion is located at a predetermined distance from the fiber optic system.

4. The fiber optic system of claim 3, further comprising a body configured for removably mounting onto the pump proximate the reciprocating portion, and wherein the first and second fiber optic lines are disposed within the body.

5. The fiber optic system of claim 3, wherein the first and second fiber optic lines comprise acrylic fiber.

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60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111

6. The fiber optic system of claim 5, wherein the first and second fiber optic lines comprise glass fiber.

7. The fiber optic system of claim 3, wherein the fiber optic system generates a digital signal when light is received by the second fiber optic line.

8. The fiber optic system of claim 1, wherein the portion of the pump that moves comprises a diaphragm that is driven into and out of a sealed chamber of the pump.

9. The fiber optic system of claim 8, wherein the first and second fiber optic lines are disposed at an angle calculated to reflect light off of the diaphragm when the diaphragm is located at a predetermined distance from the fiber optic system.

10. The fiber optic system of claim 8, further comprising a body configured for removably mounting onto the pump proximate the sealed chamber, and wherein the first and second fiber optic lines are disposed within the body.

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11. The fiber optic system of claim 8, wherein the first and second fiber optic lines comprise acrylic fiber.

12. The fiber optic system of claim 8, wherein the first and second fiber optic lines comprise glass fibers.

13. The fiber optic system of claim 8, wherein the fiber optic system generates a digital signal when light is received by the second fiber optic line.

14. The fiber optic system of claim 13, wherein the digital signal is used to control the movement of the diaphragm.

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15. A method for detecting a stroke of a pump comprising the acts of:

providing a first fiber optic line configured for directing light onto a portion of the pump that moves during the stroke of the pump;

providing a second fiber optic line configured for receiving light that has been transmitted from the first fiber optic line and reflected by the portion of the pump; and

transmitting light through the first fiber optic line so that it is reflected by the portion of the pump at a specified point during the stroke of the pump into the second fiber optic line.

16. The method of claim 15, wherein the portion of the pump that moves comprises a diaphragm that is driven into and out of a sealed chamber of the pump.

17. The method of claim 15, wherein the portion of the pump that moves comprises a reciprocating portion of the pump.

18. The method of claim 15, wherein the act of transmitting light through the first fiber optic line comprises repeatedly performing the act of detecting the light that is reflected off the portion of the pump and into the second fiber optic line at a specified point during the stroke of the pump.

19. The method of claim 18, further comprising the act of incrementing a count of the cycles of the pump as the light that is reflected is detected.

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20. The method of claim 15, wherein said first and second fiber optic lines comprise acrylic fiber.

21. The method of claim 15, wherein said first and second fiber optic lines comprise glass fiber.

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60 EAST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84111